Meaningful use of Electronic Health Records: What's in it for Public Health?"

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December 18, 2012

Virtual Conference

Centers for Disease Control and Prevention

Office of Surveillance, Epidemiology and Laboratory Services

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Overview - Discussion Points

- Context
- Meaningful Use Definitions
- Public Health Reporting Initiatives
- Onboarding
- Registries
- Conclusions

A Problem

Life expectancy in years vs. Health spending per capita (USD PPP). $R^2 = 0.55$
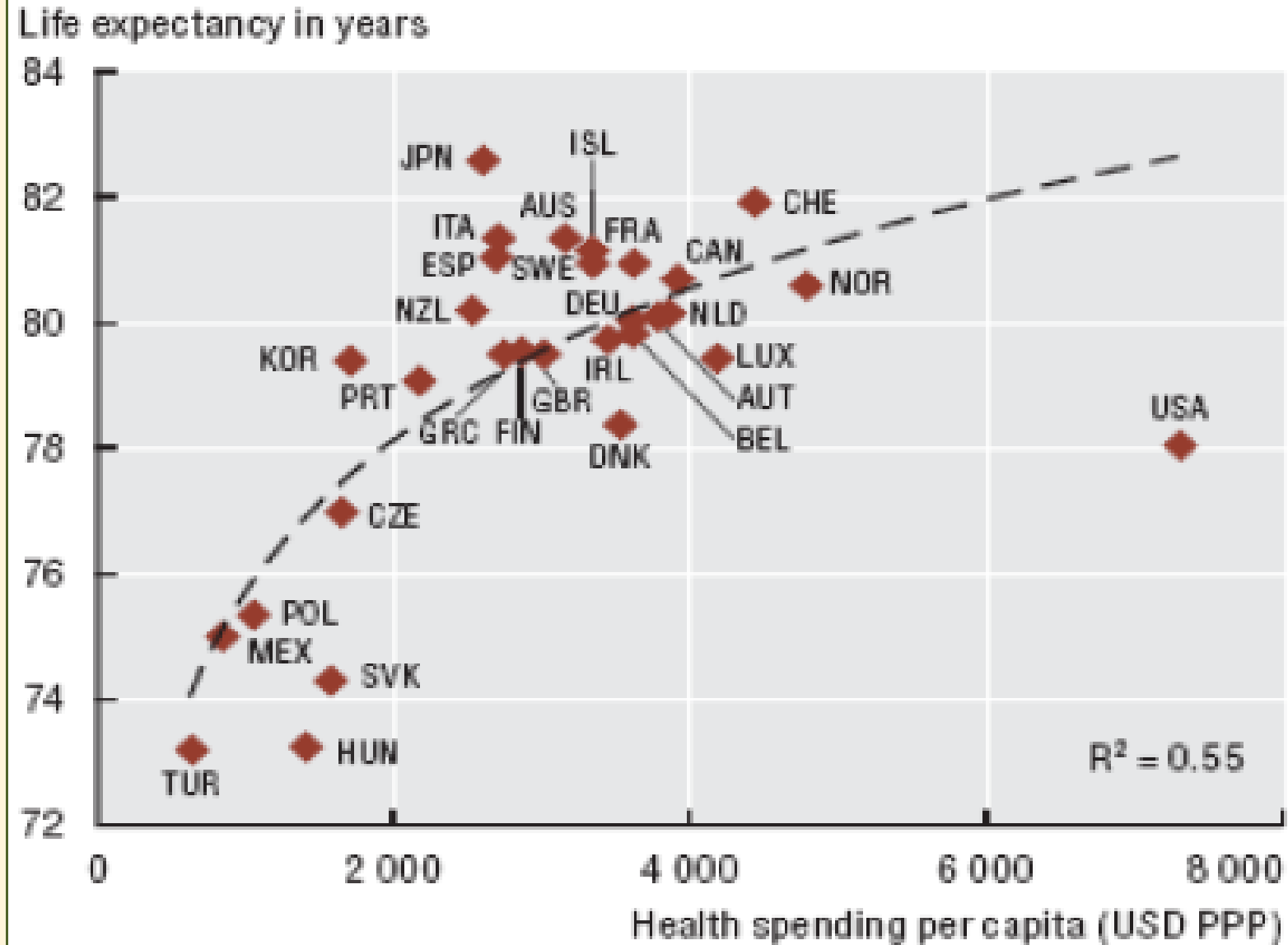
Source: OECD Health Data 2009, OECD (http://www.oecd.org/health/healthdata).

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American Recovery and Reinvestment Act

Health Information Technology for Economic and Clinical Health Act ("HITECH Act")

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TITLE XIII – HEALTH INFORMATION TECHNOLOGY

Sec 13001.

(a) Short Title- This title (and title IV of division B) may be cited as the "Health Information Technology for Economic and Clinical Health Act" or the "HITECH Act"

- • HIT Policy Committee: 18 members (3 HHS, 13 Comptroller General, 4 Congress)

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TITLE IV – MEDICARE AND MEDICAID HEALTH INFORMATION TECHNOLOGY; MISCELLANEOUS MEDICARE PROVISIONS

Denver, CO February 2009

3   OFFICE OF THE SECRETARY OFFICE OF THE NATIONAL COORDINATOR FOR HEALTH INFORMATION TECHNOLOGY (including transfer of funds)

For an additional amount for "Office of the National Coordinator for Health Information Technology $2,000,000,000 to carry out title XIII of this Act to remain available until expended

Meaningful Use Simplified

Meaningful Use Components

1. Use a certified EHR in a **meaningful manner** (e.g., e-prescribing)
2. Use a certified EHR technology for electronic **exchange of health information** to improve quality of health care
3. Use of certified EHR technology to submit **clinical quality measures** (CQM) and other such measures selected by the Secretary

Eligibility

1. Medicare ~$44,000 (if bill ~25K/year)
2. Medicaid ~$63,500 (if Medicaid constitutes 20-30% of patients)

What are the policy priorities?

Focus on use of certified EHR technology (CEHRT) toward the following policy priorities:

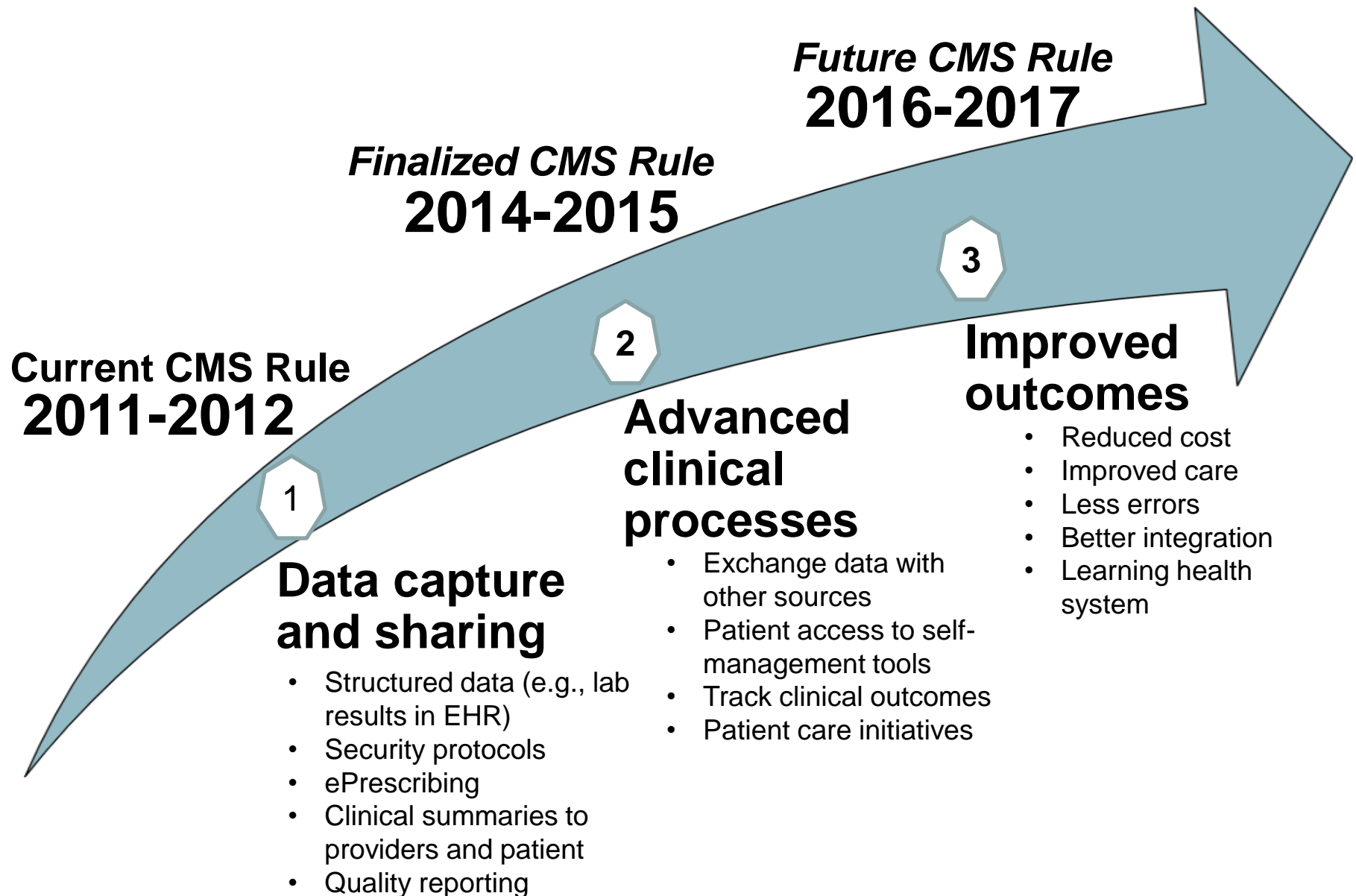| 5 Policy Priorities				
Improve quality, safety, efficiency and reduce health disparities	Improve care coor-dination	Engage patients and families in their care	Improve population & public health	Ensure adequate privacy and security protections for PHI

Staged Approach: *evolutionary path with incremental growth; each journey starts with a few steps*

Future CMS Rule
2016-2017

Finalized CMS Rule
2014-2015

3

Improved outcomes

- Reduced cost
- Improved care
- Less errors
- Better integration
- Learning health system

Current CMS Rule
2011-2012

2

Advanced clinical processes

- Exchange data with other sources
- Patient access to self-management tools
- Track clinical outcomes
- Patient care initiatives

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Data capture and sharing

- Structured data (e.g., lab results in EHR)
- Security protocols
- ePrescribing
- Clinical summaries to providers and patient
- Quality reporting

Meaningful Use Measures – Stage 1 (Core and Menu Set)

1) **Submit all 15 Meaningful Use CORE SET Measures**

- **Counting**
  - CPOE
  - eRx
  - *Vital signs*
  - *smoking status*
  - clinical summaries
- **EHR calculation**
  - *demographics*
  - problem list
  - med list
  - med allergy list
  - health info
  - *Clinical Quality Measures* *
- **Yes/No attestation**
  - drug-drug/allergy checks
  - clinical decision support
  - exchange info
  - protect PHI

and +
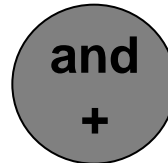
2) **Submit 5 of 10 Meaningful Use MENU SET Measures**

- **Counting**
  - lab results
  - reminders
  - access to health info
  - med reconciliation
  - summary of care
- **EHR calculation**
  - patient education
- **Yes/No attestation**
  - lists of patients
  - drug/formulary
  - *immunization registries*
  - *syndromic surveillance*

Meaningful Use – Public Health Objectives

Health Outcomes Policy Priority	Stage 1 Objective	Stage 1 Measure
Improve population and public health[1]	Capability to submit **electronic data to immunization registries** or Immunization Information Systems and actual submission in accordance with applicable law and practice	Performed at least **one test** of the certified EHR technology's capacity to submit electronic data to immunization registries and follow-up submission if the test is successful (unless none of the immunization registries to which the EP, eligible hospital or CAH submits such information have the capacity to receive such information electronically)
	Hospitals Only: Capability to **submit electronic laboratory reportable data** (as required by state or local law) lab results to public health agencies and actual submission in accordance with applicable law and practice	Performed at least **one test** of certified EHR technology's capacity to provide submission of reportable lab results to public health agencies and follow-up submission if the test is successful (unless none of the public health agencies to which the EP, eligible hospital or CAH submits such information have the capacity to receive such information electronically)
	Capability to **submit electronic syndromic surveillance** data to public health agencies and actual submission in accordance with applicable law and practice	Performed at least **one test** of certified EHR technology's capacity to provide electronic syndromic surveillance data to public health agencies and follow-up submission if the test is successful (unless none of the public health agencies to which the EP, eligible hospital or CAH submits such information have the capacity to receive such information electronically)

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[1]Unless an EP, eligible hospital or CAH has an exception for all of these objectives and measures they must complete at least one as part of their demonstration of the menu set in order to be a meaningful EHR user.

Meaningful Use – Certification Population/Public Health Core Objectives

	Stage 2 Objective	Stage 2 Measure
Improve population and public health[1]	Capability to **submit electronic data to immunization registries** or immunization information systems except where prohibited, and in accordance with applicable law and practice	**Successful ongoing submission** of electronic immunization data from Certified EHR Technology to an immunization registry or immunization information system for the entire EHR reporting period.
	Capability to **submit electronic reportable laboratory results** to public health agencies, except where prohibited, and in accordance with applicable law and practice	**Successful ongoing submission** of electronic reportable laboratory results from Certified EHR Technology to public health agencies for the entire EHR reporting period.
	Capability to **submit electronic syndromic surveillance data** to public health agencies, except where prohibited, and in accordance with applicable law and practice	**Successful ongoing submission** of electronic syndromic surveillance data from Certified EHR Technology to a public health agency for the entire EHR reporting period.

[1]Unless an EP, eligible hospital or CAH has an exception for all of these objectives and measures they must complete at least one as part of their demonstration of the menu set in order to be a meaningful EHR user.

Meaningful Use – Certification Population/Public Health <u>Menu</u> Objectives

	Stage 2 Objective	**Stage 2 Measure**
Improve population and public health[1]	Capability to s**ubmit electronic syndromic surveillance data** to public health agencies, except where prohibited, and in accordance with applicable law and practice	**Successful ongoing submission** of electronic syndromic surveillance data from Certified EHR Technology to a public health agency for the entire EHR reporting period
	Capability to identify and **report cancer cases** to a public health central cancer registry, except where prohibited, and in accordance with applicable law and practice.	**Successful ongoing submission** of cancer case information from CEHRT to a public health central cancer registry for the entire EHR reporting period
	Capability to identify and **report specific cases to a specialized registry** (other than a cancer registry), except where prohibited, and in accordance with applicable law and practice.	**Successful ongoing submission** of specific case information from Certified EHR Technology to a specialized registry for the entire EHR reporting period.

[1]Unless an EP, eligible hospital or CAH has an exception for all of these objectives and measures they must complete at least one as part of their demonstration of the menu set in order to be a meaningful EHR user.

Medicare & Medicaid Payments
November 2012

DRAFT ESTIMATES ONLY

Providers Paid	Oct-12	LTD
Medicare Eligible Providers	8,250	107,250
Medicaid Eligible Providers	4,000	66,100
Medicaid/Medicare Eligible Hospitals	525	3,750
Total Number of Unique Providers Paid	**12,775**	**177,100**

Medicare & Medicaid Payments
November 2012

DRAFT ESTIMATES ONLY

Payments	Oct-12	LTD
Medicare Eligible Providers	$150,000,000	$1,850,000,000
Medicaid Eligible Providers	$73,000,000	$1,395,000,000
Medicaid/Medicare Eligible Hospitals	$645,000,000	$6,000,000,000
Total	**$868,000,000**	**$9,245,000,000**

Public Health Reporting Initiative (PHRI)

Two key efforts:
1. harmonized data element profile and
2. Clinical Document Architecture implementation guide

Based on functioning implementations:
1. Cancer Registry reporting standard - in Stage 2 MU rules
2. National Healthcare Safety Network - recommended for Stage 3

Advantages to PHRI approach:
1. requires no change to existing MU reporting activities (i.e., ELR,, immunization registries or syndromic surveillance)
2. provides reusable, modular, and extensible methodology; could be leveraged by current and future reporting needs
   - e.g., communicable disease case reports, chronic disease reports, product safety reports, birth and death reports
3. more generic interoperability between EHR and public health surveillance systems.

Public Health Reporting Initiative

Public Health Reporting Initiative (PHRI)

Requirements for success:

1. Centers for Disease Control and Prevention (CDC) surveillance and informatics leadership: 1) support PHRI pilot implementations, 2) full-scale PRHI implementation, and 3) promote and contractually encourage broad health department migration to the new approach.

2. ONC and CMS collaboration in proposed rule making and tool building; assure PHRI products (i.e., harmonized data elements profile, consolidated clinical document architecture) are maximally aligned with the ONC-convened Standards and Interoperability Framework

3. Local and state health departments review and advise CDC. Need strong orientation and understanding by local and state health departments
   - how Stage 2 changes health departments obligations and opportunities
   - how Stage 3 may set a new foundation for public health monitoring.

Public Health Reporting Initiative

Meaningful Use Exclusions

- **Public health authority**:
  - – Insufficient technical capacity to receive the data
  - – Insufficient resources to support ongoing submission from an EP or hospital
- **Eligible Provider/Hospital** meets measure, if:
  - – registered to submit
  - – in the process of testing and validation, or
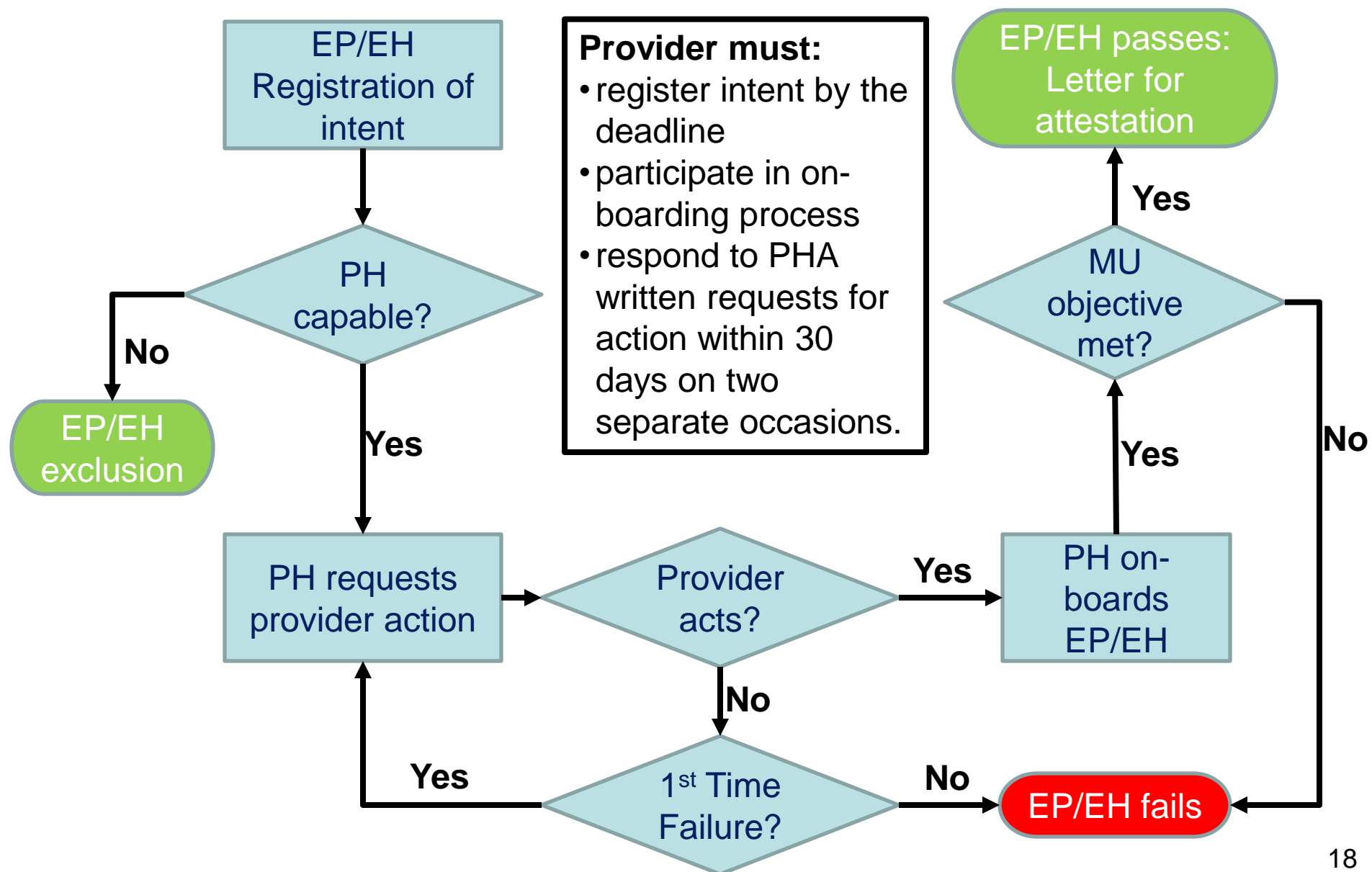 - – awaiting an invitation to begin submission.

- **<u>Declaration</u>**: how public health authority (PHA) lets community of eligible professionals and eligible hospitals (EP/EH) and CMS know what MU objectives are supported.

- **<u>Registration of Intent</u>**: how EP/EH register with PHA and indicate intent to achieve a MU measure.

- **<u>On-Boarding</u>**: how PHA queues and registers EP/EH for exchange and receipt; how PHA defines "ongoing submission" criteria.

- **<u>Acknowledgements</u>**: how PHA validates EP/EH as achieving "on-boarding" and meets criteria for ongoing submission.

Stage 2 MU: On-Boarding

```
EP/EH Registration of intent
        │
        ▼
   PH capable? ──No──► EP/EH exclusion
        │
       Yes
        │
        ▼
   PH requests provider action ──► Provider acts? ──Yes──► PH on-boards EP/EH
        ▲                              │                        │
       Yes                            No                       Yes
        │                              │                        │
   1st Time Failure? ◄─────────────────┘                        ▼
        │                                                  MU objective met? ──Yes──► EP/EH passes: Letter for attestation
       No                                                       │
        │                                                       No
        ▼                                                       │
   EP/EH fails ◄────────────────────────────────────────────────┘
```

Provider must:
- register intent by the deadline
- participate in on-boarding process
- respond to PHA written requests for action within 30 days on two separate occasions.

EP/EH Registration of intent

PH capable?

No

EP/EH exclusion

Yes

PH requests provider action

Provider acts?

Yes

PH on-boards EP/EH

Yes

MU objective met?

Yes

EP/EH passes: Letter for attestation

No

No

EP/EH fails

No

1st Time Failure?

Yes

Public Health Challenge

- swimming in an ever-deeper pool of data
- lack technology to efficiently use data or convert it to valuable information
- need for all PH staff to feel a direct relationship with data to drive decisions

Opportunities

As data increase:

- <u>harness resources</u> for precise decision-making to help improve population and patient outcomes and reduce costs

- <u>ensure organizational readiness</u> and increase information to support mission

- <u>enhance access</u> to relevant, actionable information (e.g., reports and dashboards),

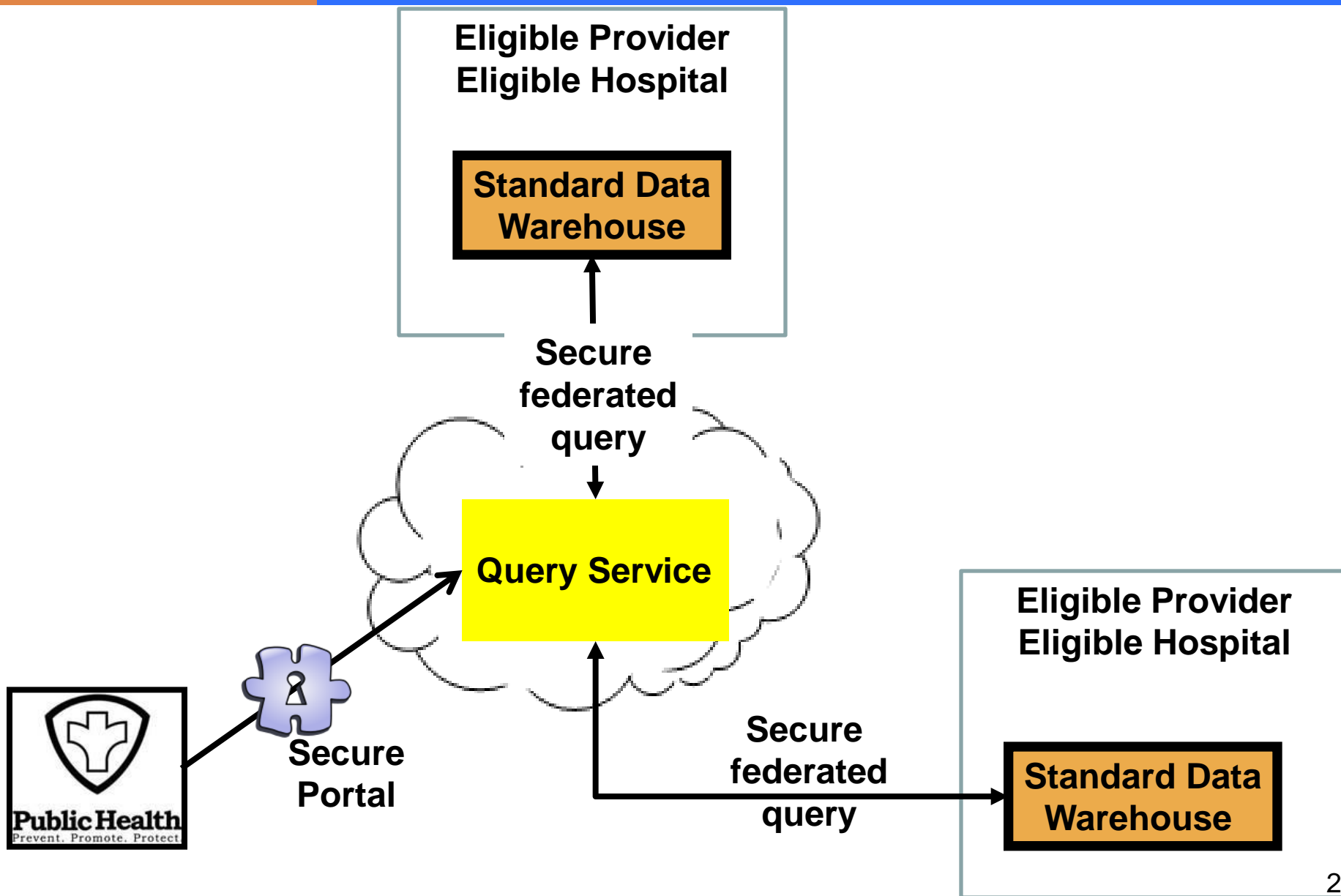- <u>monitor key performance indicators</u> (KPIs), and make well-informed decisions.

Population Surveillance

Information exchange

Personal Healthcare
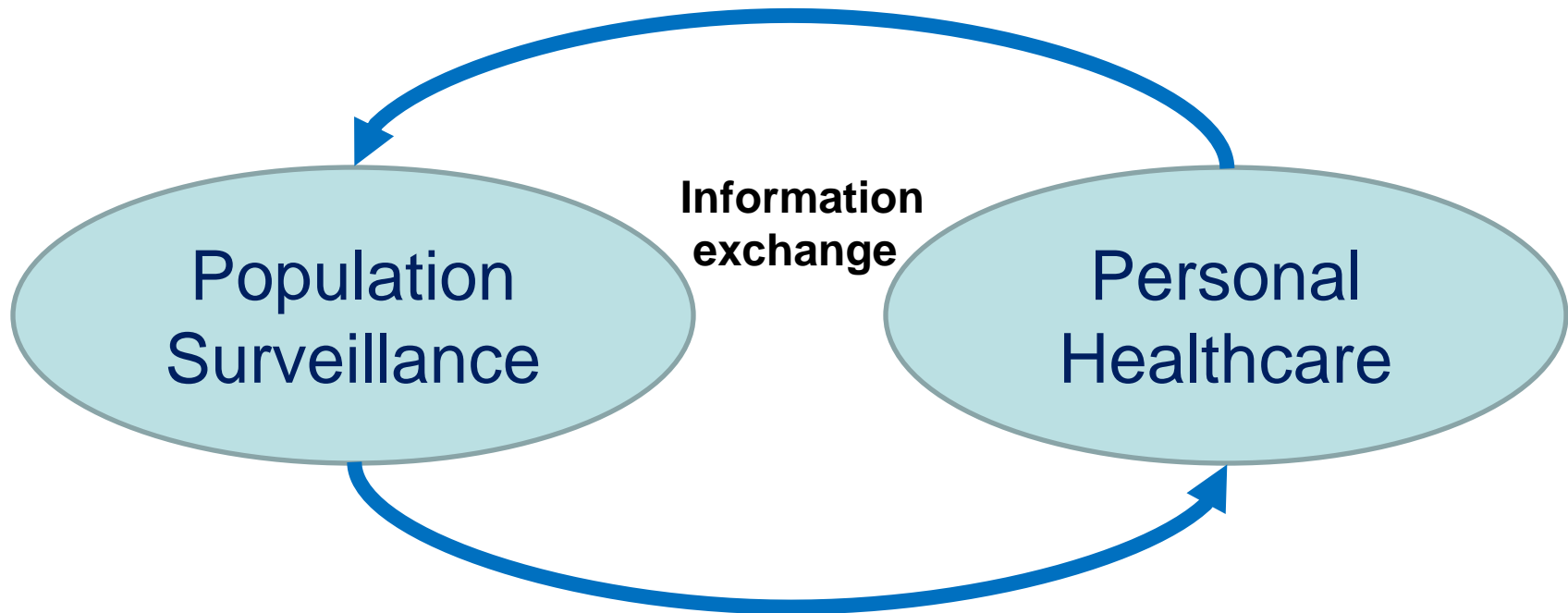
PH employee/ PH program

Web-page registration

Population Health Record

Provider(s)/Community resident(s)

Community resident / twitter

Electronic Health Record

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Specialized Registries

Eligible Provider
Eligible Hospital

Standard Data Warehouse

Secure federated query

Query Service

Eligible Provider
Eligible Hospital

Secure federated query

Standard Data Warehouse

Secure Portal

Public Health
Prevent. Promote. Protect.

Query Health Pilots

Pilot Description	Focus	Owners
NYC/NYS: Primary Care Information Project of the NYC Dept of Health and Mental Hygiene and the NYS Dept of Health	Chronic disease, reportable, syndromic	M Buck
FDA Mini-Sentinel: with 17 large data providers with 126M covered lives, Harvard Pilgrim and HMO research network.	Diagnoses, drugs, procedures	J Brown
MDPHnet: MA Dept of Public Health, MA Leagues of Community Health Centers and Atrius Health	ILI, DM surveillance	J Brown, K Benson
BioSense 2: Cloud based system	Syndromic surveillance	T Kass-Hout, M Alletto
Clinical Quality Measures: Allscripts and MITRE Group using Health Quality Measure Format (HQMF) for Stage 2 CQM reporting.	Clinical quality measures in EHR	P Rao

http://wiki.siframework.org/Query+Health+Pilots+Team

Community Transformation Grants

- Supports community-level efforts to reduce chronic diseases such as **heart disease**, cancer, **stroke**, and diabetes.

- Promotes healthy lifestyles, especially among population groups experiencing the greatest burden of chronic disease

- Targets improved health, **reduce health disparities**, and control health care spending.

- 5-year project period

- Approximately $103 million in prevention funding has been awarded to 61 states and communities serving approximately 120 million Americans.

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National Quality Strategy

Cardiovascular Disease Priorities

- Promoting the most <u>effective prevention and treatment</u> practices for the leading causes of mortality, starting with cardiovascular disease.

    - Opportunities for success:
        - Increase blood pressure control in adults
        - Reduce high cholesterol levels in adults
        - Increase the use of aspirin to prevent cardiovascular disease
        - Decrease smoking among adults and adolescents

Prevent/Treat Leading Mortality Cause

- Example: ***Prevent/reduce harm caused by CVD***

- Illustrative Measures
  - % >18 years with ischemic vascular disease whose most recent blood pressure during the measurement year is <140/90 mm Hg
  - % of patients with ischemic vascular disease whose most recent low-density cholesterol is <100
  - % of patients with ischemic vascular disease who have documentation of use of aspirin or other antithrombotic during the 12-month measurement period
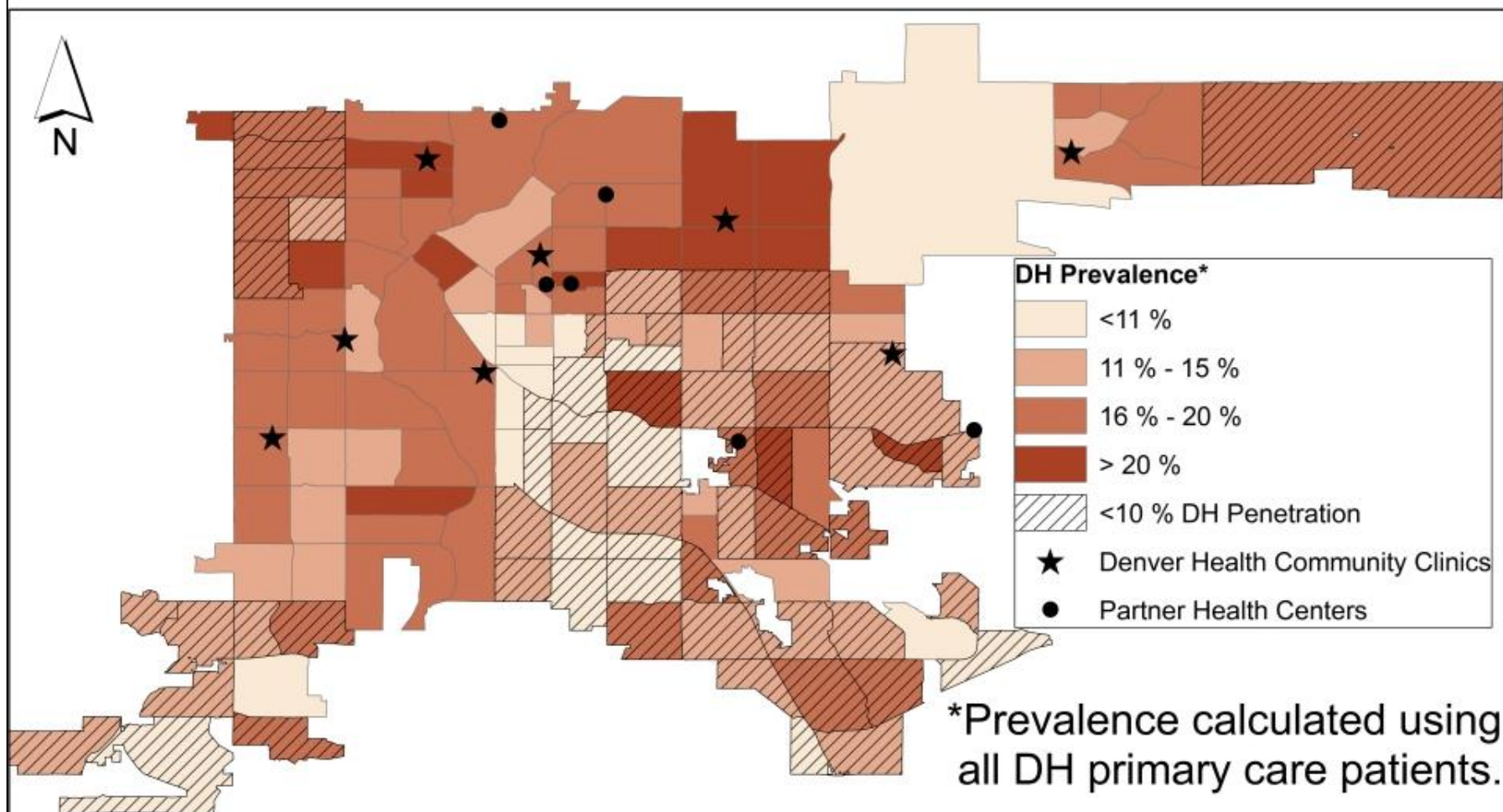 - % of patients who received evidence-based smoking cessation services (e.g., medications)

Figure 4.   *Example: Hypertension (HTN)*
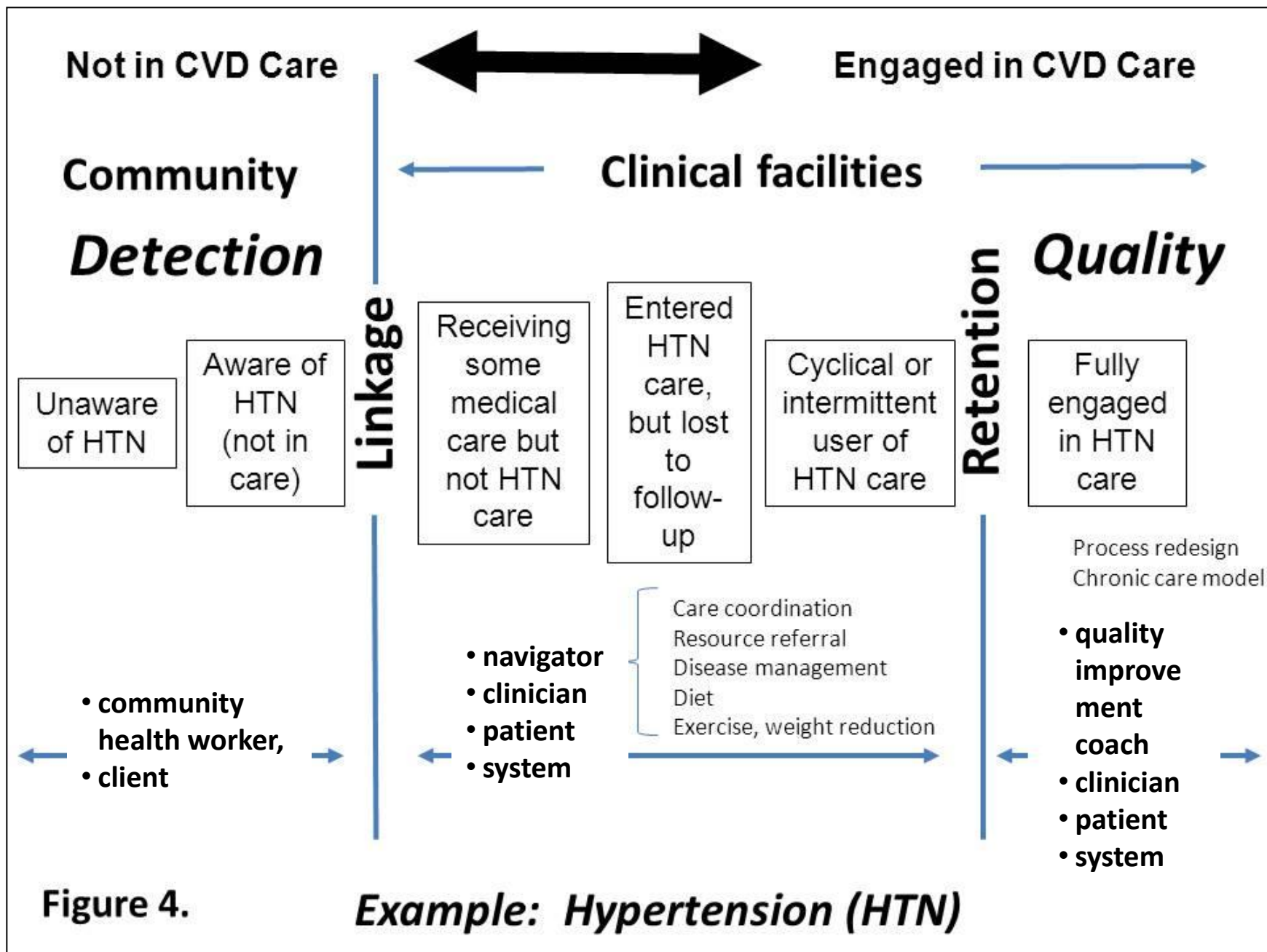
Enterprise:
Integrated Safety-Net Health Care System

Prevalence of Hypertension by Census Tract

DH Prevalence*

- <11 %
- 11 % - 15 %
- 16 % - 20 %
- > 20 %
- <10 % DH Penetration
- ★ Denver Health Community Clinics
- ● Partner Health Centers

*Prevalence calculated using all DH primary care patients.

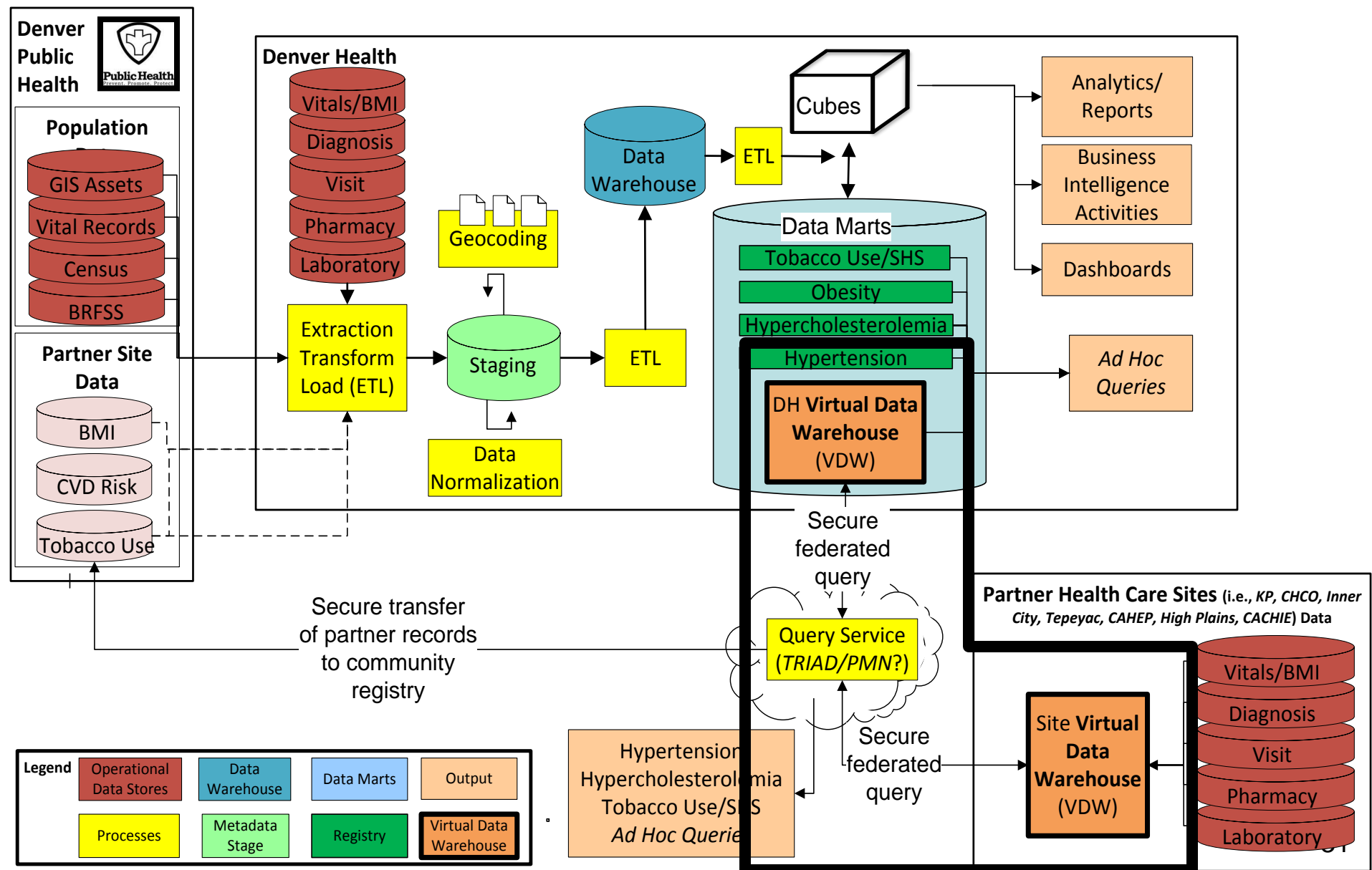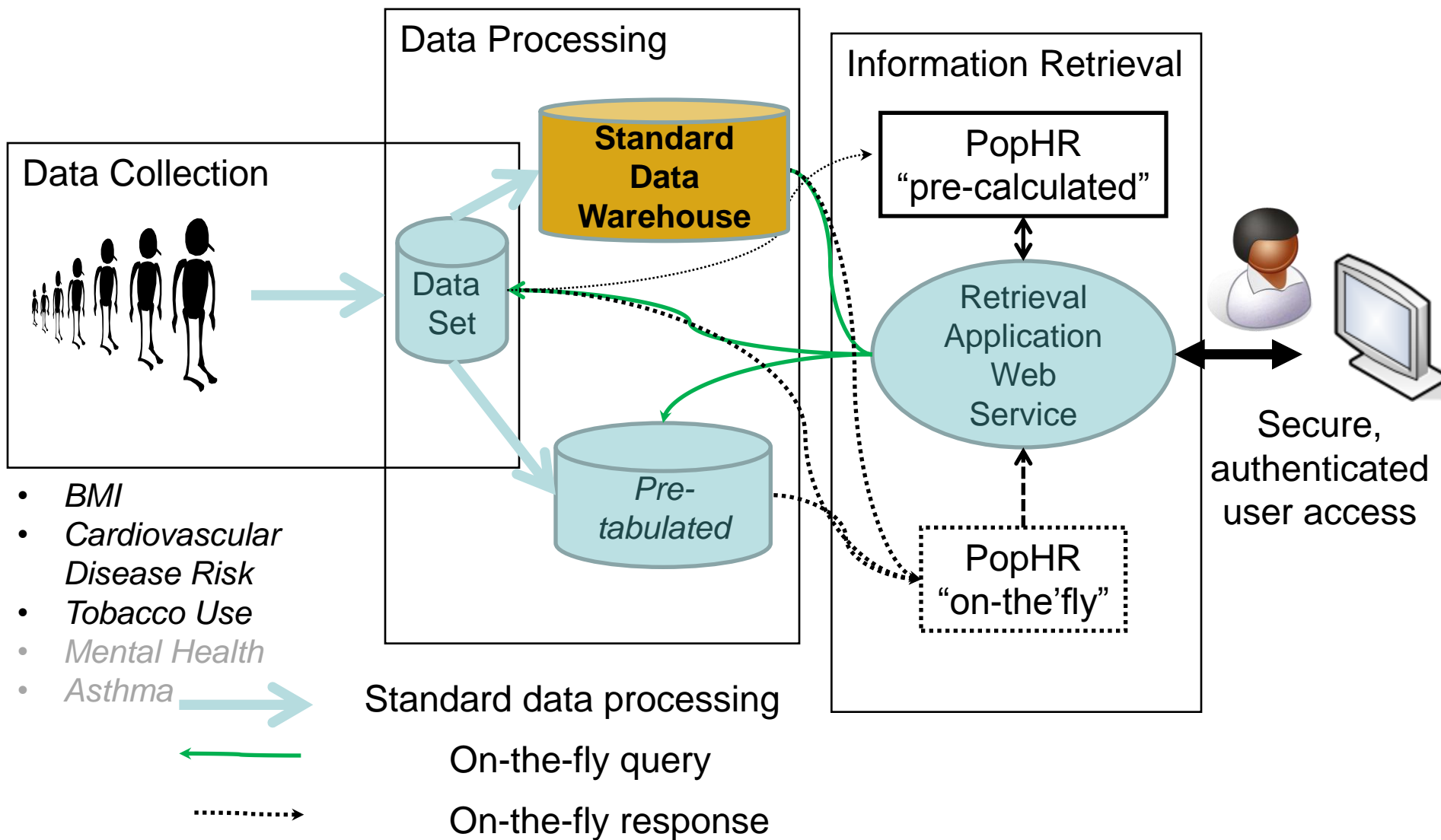NOTE: Hypertension defined as BP greater than or equal to 140/90
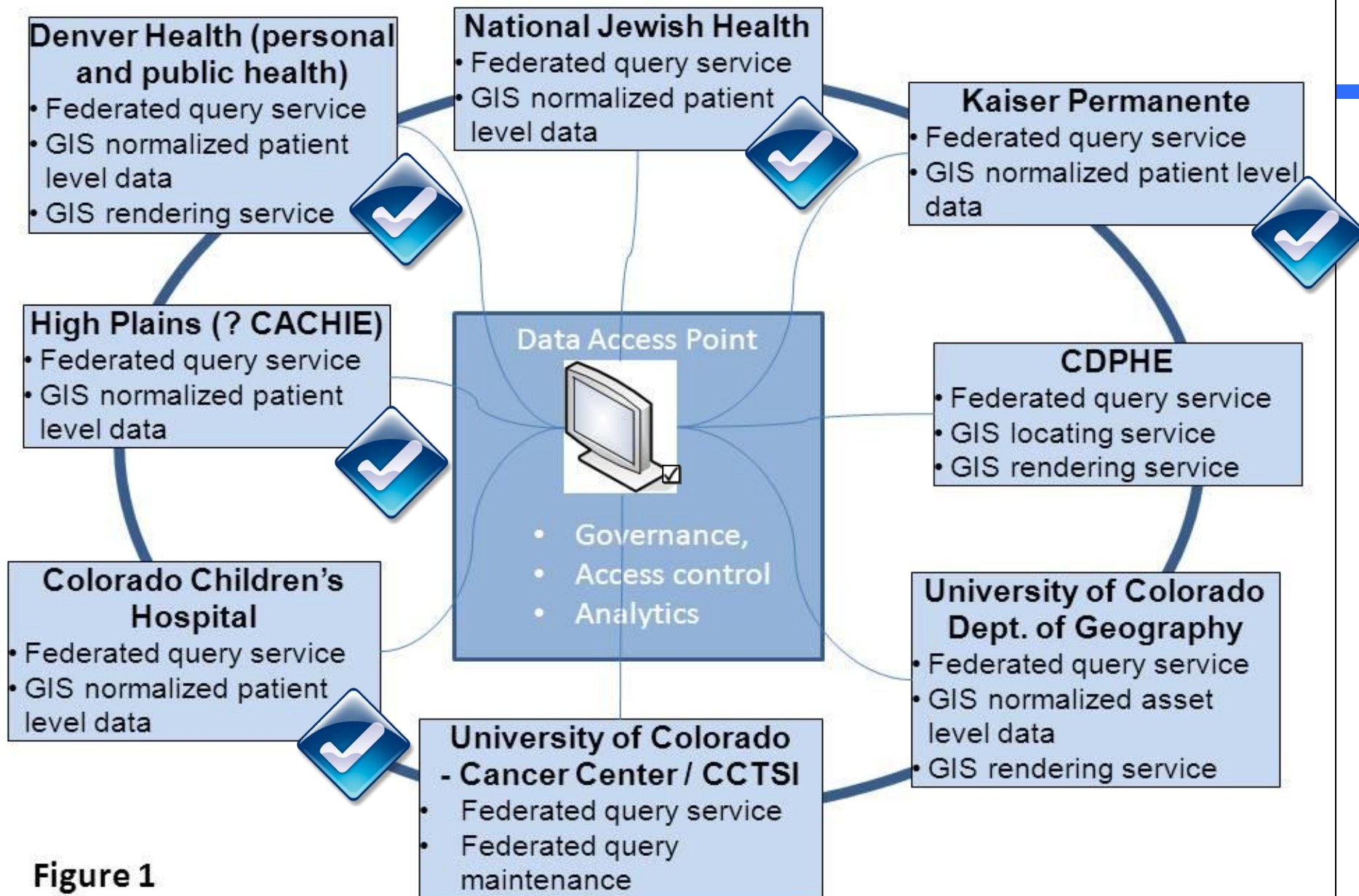
Figure 1

Specialized Registry Architecture
Colorado Health Observation Regional Data Sharing (CHORDS)

Population Health Record (PopHR)

Data Processing

Data Collection

- *BMI*
- *Cardiovascular Disease Risk*
- *Tobacco Use*
- *Mental Health*
- *Asthma*

Data Set

Standard Data Warehouse

Pre-tabulated

Information Retrieval

PopHR "pre-calculated"

Retrieval Application Web Service

PopHR "on-the'fly"

Secure, authenticated user access

→ Standard data processing

→ On-the-fly query

⋯⋯▸ On-the-fly response

Interoperability

- Remains elusive and is taking a long time
- Technology is only one obstacle to interoperability
- Policy and workflow will always preempt technology

Focus

- <u>Four levels of interoperability specification</u>:
  - workflow, messaging, format, vocabulary.

- <u>Three phases to usage</u>:
  - standards development (SDO), product development (vendors), and system deployment (users)

- <u>Five process steps for each phase</u>:
  - 1) decision to proceed, 2) allocation of resources, 3) development, 4) validation, and 5) deployment.

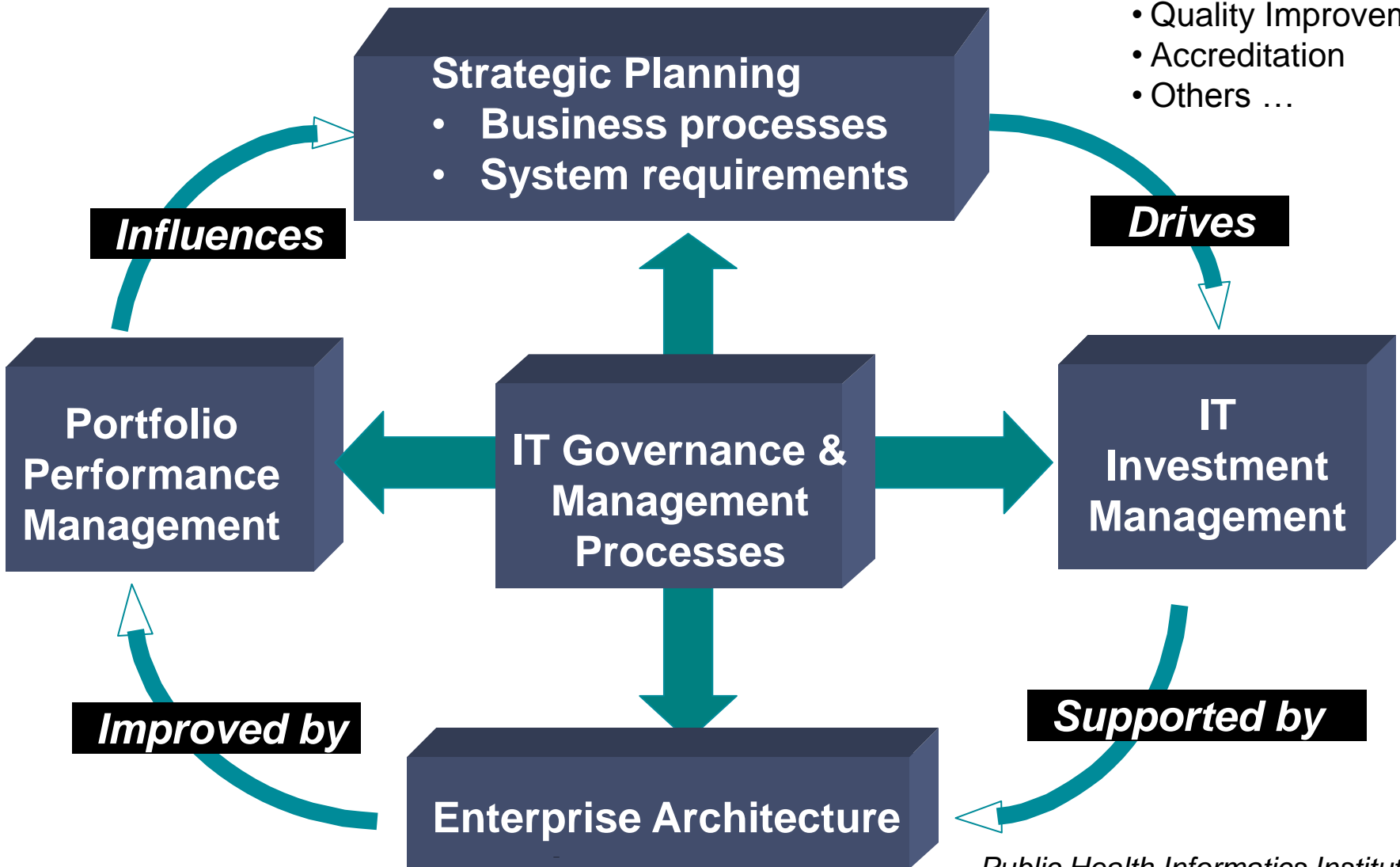# Interoperability: Network of Networks
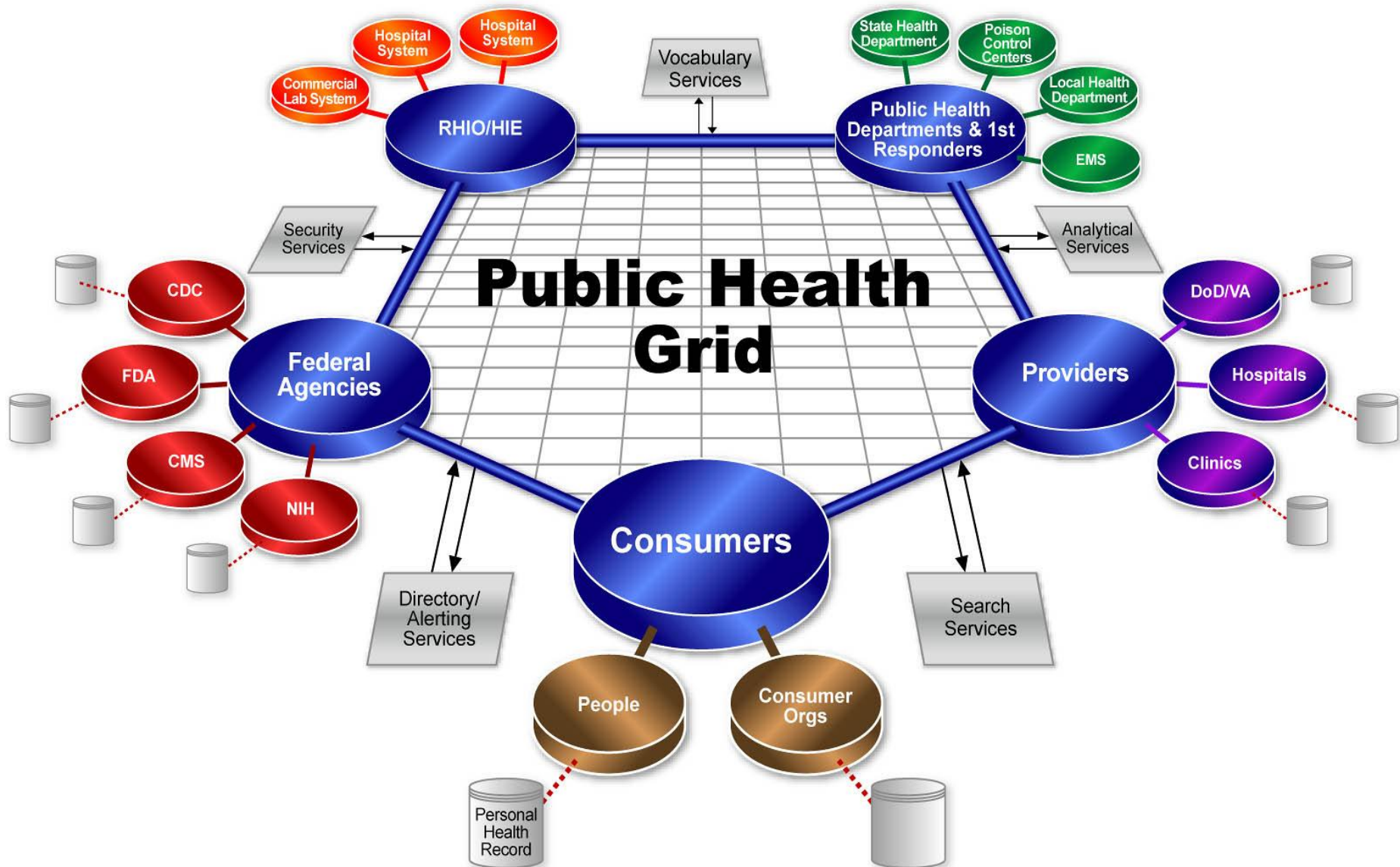
Learning Healthcare System

- **Culture**: *participatory, team-based, transparent, improving*
- **Design and processes**: *patient-anchored and tested*
- **Patients and public**: *fully and actively engaged*
- **Decisions**: *informed, facilitated, shared, and coordinated*
- **Care***: starting with the best practice, every time*
- **Outcomes and costs**: *transparent and constantly assessed*
- **Knowledge**: *ongoing, seamless product of services and research*
- Digital technology: *engine for continuous improvement*
- Health information: *a reliable, secure, and reusable resource*
- Data utility: *data stewarded and used for common good*
- **Trust fabric**: *strong, protected, and actively nurtured*
- **Leadership**: *multi-focal, networked, and dynamic*

Meaningful Use: *Public Health Opportunities*

- Data-driven programs
- Population-focused
- Quality Improvement
- Accreditation
- Others …

Strategic Planning
- **Business processes**
- **System requirements**

Influences

Drives

Portfolio Performance Management

IT Governance & Management Processes

IT Investment Management

Improved by

Supported by

Enterprise Architecture

Public Health Informatics Institute

Conclusions

- Large scale PH challenges (e.g., chronic disease epidemics) require new tools for successful monitoring and key performance indicators - meaningful use supports that.

- PH needs to focus on building multi-purpose tools and infrastructure to support several projects/programs – meaningful use presents a practice opportunity

- Strategic thinking is essential during periods of limited resources – meaningful use presents a strategic opportunity regarding enterprise solutions

- During Stage 2, LPHA capacity will be challenged - meaningful use is an opportunity for multi-agency/jurisdiction collaboration to improve surveillance and near real-time access to actionable information